Occupational Exposure Assessment For Power Frequencyelectromagnetic Fields

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Summary

Exposure assessment is the determination or estimate of the magnitude, frequency of occurrence, and rate of exposure of an individual or a group to an environmental agent. The agents of interest in this case are the electric and magnetic fields (EMF) in the extreme low frequency range that includes the power frequency of 50/60 Hz. There are an increasing concern that exposure to EMF may be associated with biological and health effects. This concern has prompted numerous measurement projects and the development of instrumentation, methodologies, and exposure models and simulations. This paper identifies the status of EMF exposure assessment research related to occupational exposures. It draws the results to emphasize the unique aspects of EMF exposures in the home and utilities environments, and highlights the research needs. The intensities of electromagnetic fields have been measured under power transmission and distribution lines, at substations and industrial plants and near various electric devices including domestic electrical equipment. The field intensities have been related to the exposure time (duration of staying) in the different areas and have been compared with the international established standards. The data presented are useful for understanding the levels of electromagnetic fields that can be encountered in various places and also for estimating possible occupational and residential exposure levels